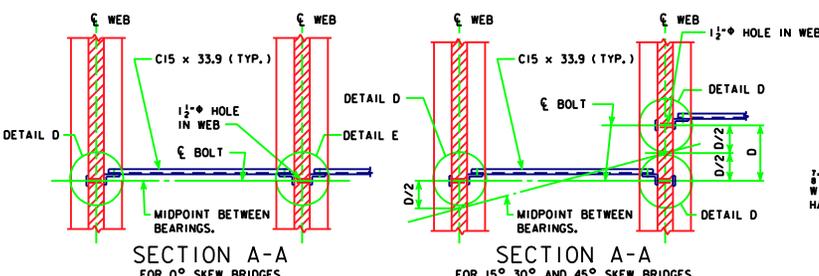
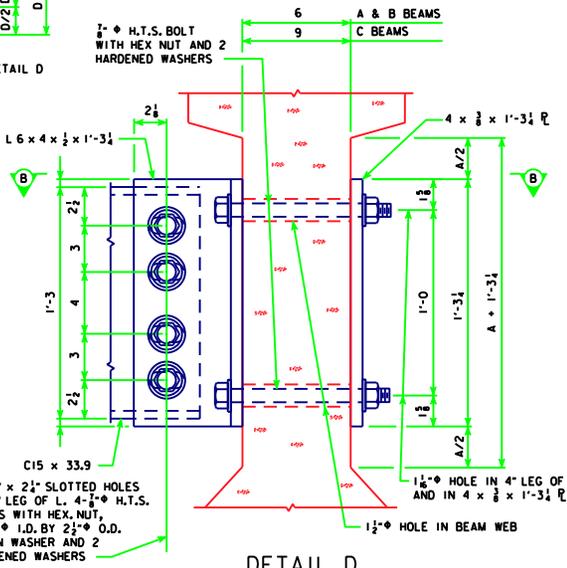


SECTION SHOWING INTERMEDIATE DIAPHRAGM

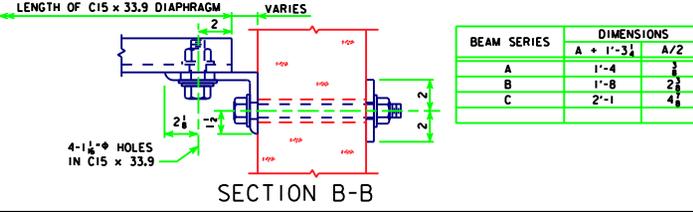


SECTION A-A FOR 0° SKEW BRIDGES

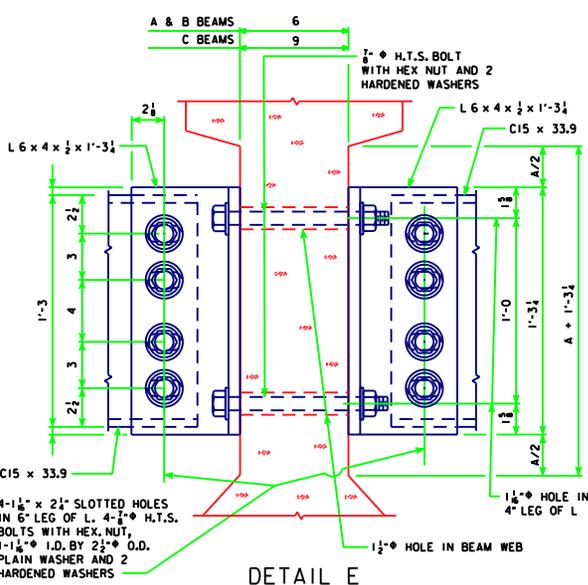
SECTION A-A FOR 15°, 30° AND 45° SKEW BRIDGES



DETAIL D



SECTION B-B



DETAIL E

NOTES:

- ALL DIAPHRAGM MATERIALS, INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED.
- SHOP DRAWINGS OF THE STEEL DIAPHRAGMS SHOWING LAYOUT AND DETAILS OF THE DIAPHRAGMS SHALL BE SUBMITTED FOR APPROVAL.
- ALL COSTS FOR FURNISHING AND INSTALLING STEEL INTERMEDIATE DIAPHRAGMS SHALL BE INCLUDED IN THE PRICE BID FOR STRUCTURAL STEEL.
- THE 1 1/2\"/>

CONCRETE DIAPHRAGM DETAILS SHALL BE PROVIDED IN THE BRIDGE PLANS FOR OVERHEAD BRIDGES. DESIGNER SHALL ADJUST THE CONCRETE, REINFORCING AND STRUCTURAL STEEL QUANTITIES ACCORDINGLY.

INTERMEDIATE DIAPHRAGM STRUCTURAL STEEL

ONE CONNECTION DETAIL "E"

WEB THICKNESS (IN.)	LENGTH OF H.T.S. BOLTS (IN.)	WEIGHT PER DETAIL (L.B.)	BRIDGE SKEW	
			0°	15°, 30° & 45°
6	9	4.30	12	0
9	12	5.34	12	0
2-L6x4x1/2x1'-3 1/4" = 41.2 LB			12	0

ONE CONNECTION DETAIL "D"

WEB THICKNESS (IN.)	LENGTH OF H.T.S. BOLTS (IN.)	WEIGHT PER DETAIL (L.B.)	BRIDGE SKEW	
			0°	15°, 30° & 45°
6	9	4.30	6	30
9	12	5.34	6	30
1-BACKING PL 4x1/2x1'-3 1/4" = 6.5 LB			6	30
1-L6x4x1/2x1'-3 1/4" = 20.6 LB			6	30

* ONE C15 x 33.9 DIAPHRAGM

WEB THICKNESS (IN.)	BEAM SPACING	LENGTH	NO. OF DIAPH.	UNIT WEIGHT (L.B.)	WEIGHT (L.B.)
6	7'-4 1/2"	6'-7 1/2"	15	224.4	3366.2
9	7'-4 1/2"	6'-4"	15	215.9	3239.0

DIAPHRAGM CONNECTION BOLTS

NO. OF DIAPH.	WEIGHT (L.B.)
15	154.5

TOTAL WEIGHT

NO. OF DIAPH.	WEIGHT (L.B.)
6	4255
9	4147

* THE LENGTH OF THE C15 x 33.9 IS BASED ON A VARIABLE CLEARANCE OF 1 1/4" TO 2 1/4" BETWEEN THE FACE OF BEAM WEB AND END OF C15 x 33.9.

Iowa Department of Transportation
Highway Division

STANDARD DESIGN - 40' ROADWAY, THREE SPAN BRIDGE
PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES

HL93 SUPERSTRUCTURE DECEMBER, 2006 HS25 SUBSTRUCTURE

INTERMEDIATE STEEL DIAPHRAGMS	H40-38-06
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LATEST REVISION DATE

Thomas E. Mc Donnell
APPROVED BY BRIDGE ENGINEER